

CONTROL SYSTEM

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ABSTRACT

Control system for devices such as an audio reproduction
10 system, an actuator device, an electromechanical device and a
telephony device. The system includes control circuitry which
receives an input signal and a signal indicative of a position
of a portion of the controlled apparatus. The control circuit
provides an output signal to the controlled apparatus to affect
15 an operation of the controlled apparatus. The output signal
provides control of the apparatus to compensate for one or more
of: motor factor; spring factor; back electromotive force; and
impedance of a coil in a driver of the controlled apparatus.
The signal indicative of position is derived by one or more
20 position indicator techniques such as an infrared LED and PIN
diode combination, position dependent capacitance of one portion
of the controlled apparatus with respect to another portion of
the controlled apparatus, and impedance of a coil in the
controlled apparatus. The control circuitry is configurable to
25 control transconductance and/or transduction of the system being
controlled. A technique is disclosed to detect and measure a
cant of a voice coil transducer, the technique including
measuring a capacitance between one portion of the voice coil
transducer with respect to another portion of the voice coil
30 transducer over a range of movement of the voice coil during
operation.